



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Thomas Eckel et al.
Serial No. : 10/007,465
Filed : December 3, 2001
For : POLYCARBONATE COMPOSITIONS
Art Unit : 1712
Examiner : David Buttner

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DECLARATION

I, Thomas Eckel, residing at Pfauenstr. 51, 41540 Dormagen, Germany, declare as follows:

- 1) that I have the following technical education and experience:
 - a) I am a chemist having studied at the Phillips-Universität of Marburg, Germany, from 1978 to 1987,
 - b) I received the degree of doctor rer. nat. at the Phillips-Universität of Marburg in the year of 1987,
 - c) I am employed by Bayer AG since July 1987 in the Research Department especially handling polymer blends;
- 2) that I am one of the inventors of U.S. Patent Application Serial No. 10/007,455, filed December 3, 2001,
- 3) that the following tests were carried out under my immediate supervision and control:

Experimental results

Component A 3

Linear polycarbonate based on bisphenol A with a relative solution viscosity of 1.255, measured in CH₂Cl₂ as solvent at 25°C and a concentration of 0.5 g/100 ml

Component B

Graft polymer consisting of 40 parts by wt. of a copolymer from styrene and acrylonitrile in the ratio of 72 : 28 on 60 parts by wt. of crosslinked polybutadiene rubber in particulate form (mean particle diameter d₅₀ = 0.32 μm), prepared by emulsion polymerization. By means of extraction in methyl ethyl ketone, subsequent precipitation and drying the rubber-containing portion Ba is determined to be 80 wt. % and the rubber-free portion Bb to be 20 wt. % (based on B).

Component C

Styrene/acrylonitrile copolymer with a styrene/acrylonitrile ratio by weight of 72 : 28 and an intrinsic viscosity of 0.55 dl/g (measurement in dimethyl formamide at 20 °C).

Component D1

Triphenyl phosphate, Disflamoll TP® from Bayer AG.

Component D3

Bisphenol-A-based oligophosphate, Reofos BAPP from Great Lakes Chem.

Preparation and testing of the molding compositions

The mixing of the components of the compositions takes place on a twin screw extruder (ZSK 25) at 260 °C.

The determination of the notch impact strength a_k is carried out to ISO 180/1 A. The determination of the Vicat B softening point takes place to DIN 53 460 (ISO 306) on rods 80 x 10 x 4 mm³ in size. The fire behavior of the samples was measured to UL-Subj. 94 V on rods 127 x 12.7 x 1.5 mm in size produced on an injection molding machine at 260 °C.

Comparative Examples Le A 34 860-US (Z < 1)

	1 (Comp.)	2 (Comp.)
A3	64.2	63.8
B	8.3	9.1
B_a	6.6	7.3
B_b	1.7	1.8
C	14.6	10.4
D1	12.0	-
D3	-	15,0
PTFE	0.4	0.4
Additives (mould release, stabilizer, etc.	0.5	1.3
Z = $\frac{B_a}{B_b+C}$	0.4	0.6
a_k -20°C [kJ/m²]	6 (brittle)	7 (brittle)
Vicat B 120 [°C]	88	94
UL 94 V /1,5 mm	V-0	V-0

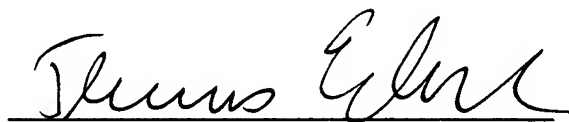
The additives are not believed to have any effect on the mechanical properties as mentioned above in table 2.

It is generally known that the addition of phosphorus components as presently described have a plasticizing effect on thermoplastic PC/ABS compositions and yielding in a decrease of notch impact strength.

Therefore it is surprising and unexpected that compositions as presently claimed have a high level of notch impact in the low temperature range.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signed at Dormagen, this 30th day of June, 2003.

A handwritten signature in cursive script, appearing to read 'Thomas Eckel', written over a horizontal line.

THOMAS ECKEL